Quadratics: When to use ZPP, Quadratic Formula, or neither of them to solve an equation

1. When a quadratic equation is equal to zero AND has **at least an a-value and b-value** then solve using ZPP or Quadratic Formulas.

2. Use ZPP when you can factor the quadratic.

(a) $6x^2 - 8x = 0$

$2x(3x - 4) = 0$

Use ZPP

(b) $x^2 + 4x + 4 = 0$

$(x + 2)(x + 2) = 0$

3. Use Quadratic Formula when you can NOT factor the quadratic.

(a) $3x^2 + 12x + 1 = 0$

This quadratic can't be factored so must use the quadratic formula to solve it.

$$x = \frac{-12 \pm \sqrt{(12)^2 - 4(3)(1)}}{2 \cdot 3}$$

4. If the b-value is zero (no b-value shown) then do NOT use ZPP nor Quadratic Formula!

(a) $8x^2+7=12$ (b) $7x^2=49$